

United States Patent Office.

JONATHAN B. TURNER, OF JACKSONVILLE, ILLINOIS, ASSIGNOR TO HIMSELF AND BRONSON MURRAY, OF NEW YORK CITY.

Letters Patent No. 92,233, dated July 6, 1869.

IMPROVEMENT IN CLOD-BREAKER AND PULVERIZER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JONATHAN B. TURNER, of Jacksonville, county of Morgan, and State of Illinois, have invented a certain new and useful Clod-Breaker and Pulverizer; and I do hereby declare that the following is a full and clear description of the same, reference being had to the accompanying drawings, making part of this specification.

The object of my invention is to provide a means for thoroughly pulverizing all lumps and clods of earth which may remain after ground has been plowed and harrowed in the common manner, to prepare it, by the use of animal-power, for the reception of seeds ordinarily cultivated by hand, as well as to furnish a convenient clod-breaker for general farm-work.

In the accompanying drawings—

Figure I is a longitudinal vertical section, taken in the line *x x*' of Fig. II.

Figure II is a plan or top view of the machine.

Like letters designate like parts in each of the figures.

The three chains, composed of links, *e e e*, are coupled together at their forward ends by the ring *f*, which furnishes a convenient means of attaching the motive-power to the machine.

Through a link of each chain, at a proper distance from the ring *p*, to secure the easiest draught, I pass the square bar *B'*, opening the links *e e e* first for that purpose, and spreading the outer chains, so that they shall be at equal distances from either end of said bar, and from the centre chain, which last is made to correspond with the centre of the bar *B'*.

The links *e e e*, through which the bar *B'* passes, are then closed down upon notches in the same, or are held by bolts or pin permanently in position thereon, and are so adjusted that when the chains lie along the ground, an edge or angle of the bar *B'* shall be downwards, and so that a horizontal line shall pass through two angles thereof, not contiguous if a square bar, or contiguous if a triangular bar, as I do not confine myself to the use of square bars, a triangular bar answering equally as well.

Two or more links back of this bar *B'*, in each of the chains, and through corresponding links therein, I pass the second bar *B''*, and fasten it in like manner and position as the first, and so on with bars *B'* and *B''*, all of the bars being at equal distances from each other, and their number being increased according to the power designed to draw the machine, or the amount of work required of it.

The number of chains may also be increased, if needed to secure strength; and I do not confine myself to any specific number or sizes of chains or bars.

Upon the bars *B'* to *B''*, and between their chains, I place, so as to rest loosely upon the same, the bearers *A A*, of such a length as to reach over all the bars,

and which are united at their ends by the ties *c c*, and further united by the ends *a a* and bottom *b* of the box *E*, which is formed by the last-mentioned pieces, and a part of the bearers *A A* serving as sides therefor.

This box *E*, with its bearers, is fastened loosely to the bars and chains by loops at *d d*, which attach the ties *c c* to the links *e e* of the central chain.

The forward ends of the bearers are turned up like the runners of a sled, and for a like purpose.

The uses and operation of my machine are as follows:

Having placed a sufficient weight in the box *E* to give the crushing weight required, the machine is drawn forward by the ring *f*, an angle of each of the bars *B'* to *B''* resting upon the ground, and, as then, successively come in contact with the clods or lumps of earth upon the surface, and being held to their work by the load in the box *E* operating effectually upon each bar by means of the bearers *A A*, and yet allowing free motion upon lifting the load both laterally and vertically, by reason of the link-connections, they are cut, crushed, or ground by the sharp angles of the bars, the weight of the load, or the wave-like motion secured to the bars by their link-connections, said links also assisting in the disintegration of the lumps, the whole thus securing the pulverizing of each clod or lump over which the machine passes.

Other advantages secured by my invention are the slight liability to clog, secured by the link-connections of the bars, and the tendency of the machine when in operation to level as well as pulverize the ground.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The use of parallel chains, attached at right angles, or angles less than right angles, to parallel bars, the whole forming a drag for the purpose of destroying clods or lumps of earth, by attrition, when drawn over the same.

2. The use of angular bars of metal, secured so as to be drawn over the ground with an edge or angle downward, and in contact therewith, for pulverizing the surface of the ground, as and for the purposes hereinbefore described.

3. Uniting the bars *B'* to *B''* by links, so as to allow independent lateral and vertical motion, substantially as and for the purposes hereinbefore described.

4. The angular bars *B'* to *B''*, box *E*, and bearers *A A*, chains *e e e*, and loops *d d*, all arranged and combined substantially as and for the purposes hereinbefore described.

J. B. TURNER.

Witnesses:

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